

Serial No. 09/883,342
Reply to Office Action of April 28, 2004
Reply dated July 27, 2004

Docket No. K-0075A

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method for determining a frame quality in a mobile communication system comprising ~~the steps of:~~

a''
estimating a signal to ~~noise power~~ interference ratio ~~of an allocated traffic channel from power control bits (PCBs) extracted from power control groups (PCGs) of a frame received through the traffic channel and a signal received through a pilot channel received during a section of the PCGs in a control hold state~~ based on multiplying a bit to symbol rate ratio of a full rate by a value obtained by dividing a power for a traffic channel of the full rate by interference in a control hold state; and

comparing the estimated signal to ~~noise power~~ interference ratio with a preset reference ~~signal to noise power ratio~~ to determine the quality of the received frame.

2-3. (Canceled)

4. (Currently Amended) The method of claim 2, wherein the ~~noise power~~ interference is the sum of the ~~power of interference signals by users in one cell and different cells~~ interference of a same cell and another cell.

5. (Currently Amended) The method of claim 1, ~~wherein a corresponding mobile station or system controls~~ further comprising:

controlling a power control reference value to maintain ~~[[its]]~~ a target frame error rate in ~~accordance with~~ a corresponding mobile station or system based on the determined frame quality.

6. (Currently Amended) The method of claim 1, wherein an erasure indicator bit ~~value which will be used to control transmitting power of an opposing mobile station or system~~ is determined ~~in accordance with~~ based on the determined frame quality to control a transmit power.

7. (Currently Amended) The method of claim 1, ~~wherein a corresponding mobile station or system checks a channel of a received signal and determines~~ further comprising:
determining whether to drop a set call based on a frame quality indicator.

8. (Currently Amended) An apparatus for determining a frame quality in a mobile communication system comprising:

~~a PCB extracting unit for extracting PCBs from PCGs of a frame received through an allocated traffic channel in a state that no data transmission occurs between a mobile station and its control system and the PCBs are only transmitted and received through the traffic channel;~~

an SIR (Signal to Interference Ratio) estimating unit for estimating a signal to noise power interference ratio of the traffic channel from the extracted PCBs and a signal received through a pilot channel received during a section of the PCGs based on multiplying a bit to symbol rate ratio of a full rate by a value obtained by dividing a power for a traffic channel of the full rate by interference in a control hold state; and

a comparator for comparing the estimated signal to ~~noise power interference~~ ratio with a preset reference value to generate a quality indicator bit of the received frame to determine the quality of the frame.

9. (Currently Amended) The apparatus of claim 8, wherein the ~~noise power interference~~ is the sum of the power of interference signals by users in one cell and different cells interference of a same cell and another cell.

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10-11. (Canceled)

12. (Currently Amended) The apparatus of claim 8 ~~wherein a corresponding mobile station or system controls~~, further comprising:

a controller for controlling a power control reference value to maintain [[its]] a target frame error rate ~~in accordance with~~ a corresponding mobile station or system based on the quality indicator bit.

13. (Currently Amended) The apparatus of claim 8, wherein an erasure indicator bit ~~value which will be used to control transmitting power of an opposing mobile station or system is determined in accordance with~~ based on the quality indicator bit to control a transmit power.

14. (Currently Amended) The apparatus of claim [[1]] 8, wherein a corresponding mobile station or system ~~checks a channel of a received signal and~~ determines whether to drop a set call based on a frame quality indicator.

15. (New) The method of claim 1, wherein the control hold state corresponds to a state when only Power Control Bits (PCBs) are transmitted.

16. (New) A method for determining a frame quality in a mobile communication system, comprising:

determining a quality of the frame received through an allocated traffic channel in a control hold state in which only Power Control Bits (PCBs) are transmitted, wherein the quality of the frame is determined by estimating a signal to interference ratio based on the traffic channel and a pilot channel during the control hold state.

17. (New) The method of claim 16, further comprising:
comparing the estimated signal to interference ratio with a preset reference value to determine the quality of the frame.

18. (New) The method of claim 16, further comprising:
extracting at least one of the PCBs from power control groups of the frame.

19. (New) The method of claim 16, wherein the signal to interference ratio is estimated by a power of the traffic channel based on the power control bit and a power of the pilot channel.

20. (New) The method of claim 16, wherein the signal to interference ratio is estimated by multiplying a bit to symbol rate ratio of a full rate by a value obtained by dividing the power for the traffic channel of the full rate by the interference.

21. (New) The method of claim 16, wherein a power of the traffic channel is estimated based on a power control bit power and a pilot channel power corresponding to the power control bit.

22. (New) The method of claim 16, wherein an erasure bit is determined based on the determined frame quality to control a transmitting power:

23. (New) The method of claim 16, further comprising:
determining whether to drop a set call based on a frame quality indicator.

24. (New) The method of claim 16, further comprising:
transmitting a frame quality indicator generated based on the determined frame quality.
